REMARKS

The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Claims 1-31 are pending in this case. Claims 1-31 have been rejected under 35 U.S.C. § 102(e). New claim 32 has been added.

Response to 35 U.S.C. § 102(e) Rejections

The Examiner rejected claims 1-31 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,466,616 ("Stenstrom et al."). Applicants respectfully submit that the prior art fails to disclose or suggest at least mechanism for determining channel order and corresponding channel taps whereby a threshold is selected in accordance with the noise floor calculated using taps corresponding to the lowest average energy levels. Therefore, Applicants respectfully traverse the rejections and request favorable reconsideration.

Stenstrom et al. teaches an apparatus and method for minimizing the computational load and power consumption in a receiver by adjusting the number of taps used in a pre-filter and an equalizer. The apparatus includes a memory for storing a signal, channel estimator for estimating a quality parameter and a number of channel filter taps using the stored signal. A controller evaluates estimated quality parameter and the estimated number of channel pre-filter taps to be used in the pre-filter. The controller also evaluates the estimated quality parameter and the estimated number of channel filter taps to determine a number of equalizer taps to be used in the equalizer where the number of equalizer taps is less than or equal to the estimated number of channel filter taps.

The controller of Stenstrom et al. is operative to calculate an envelope of the channel impulse response (Env_h) and determine the number of effective channel taps (Eff_h) that have energy above a predetermined threshold using the estimated channel filter taps 'h'. See column 5, lines 17-25.

In contrast, the mechanism of the present invention is operative to estimate the channel order by averaging over time the energy of an initial channel estimate, calculating a noise floor using those taps that correspond to the lowest average energy and setting a threshold in accordance with the noise floor. The number of channel taps above the threshold represent the channel order. The values of the channel taps may be taken as the taps that are above the threshold or in accordance with the invention, the channel taps above the threshold can be refined by recalculating the channel estimate using the channel order estimate obtained. These features are neither taught nor suggested by Stenstrom et al.

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The mechanism of the present invention is operative to estimate the channel order by calculating the average energies of an initial channel estimate over time. The noise floor is calculated using these average energy values. A number of the lowest average energy values are then used to calculate the noise floor. It is this noise floor that is used to determine the threshold by which the taps are chosen for the channel order.

Although Stenstrom et al. determines the number of effective channel taps (Eff_h) that have energy above a predetermined threshold, no way of determining the threshold is provided. In the present invention, however, the mechanism of determining the threshold is a key feature and is described in detail and included as a limitation in each of the independent claims.

Further, Stenstrom et al. does not teach averaging the energies of the taps of the initial channel estimate over time. Rather, the number of pre-filter taps is and the number of equalizer taps are determined using quality parameters such as signal-to-noise ration (SNR) and the estimated noise effect. See column 5, lines 1 to 5.

It is submitted that the independent claims 1, 7, 13, 26 and new claim 32 are not anticipated by Stenstrom et al. or any of the referenced cited by the Examiner. It is thus believed that independent claims 1, 7, 13, 26 and 32 overcome the Examiner's § 102(e) rejection based on the Stenstrom et al. reference. In addition, it is believed that dependent claims 2-6, 8-11, 13-25, 27-31 also overcome the Examiner's rejection based on § 102(e) grounds. The Examiner is respectfully requested to withdraw the rejection based on § 102(e).

<center>New Claims</center>

New claim 32 has been added. Support for the new claim may be found throughout the specification and drawings as filed in this application. In particular, reference may be made to page 6, line 1 through page 24, line 13 and the Figures references therein. No new matter has been added.

<center>Correction of Typographical Errors</center>

Amendments haven been made to correct grammatical and usage errors in the specification. No new matter has been added to the application by these amendments.

<center>Conclusion</center>

In view of the above amendments and remarks, it is respectfully submitted that independent claims 1, 7, 13, 26, 32 and hence dependent claims 2-6, 8-11, 13-25, 27-31 are now in condition for allowance. Prompt notice of allowance is respectfully solicited.

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In light of the Amendments and the arguments set forth above, Applicants earnestly believe that they are entitled to a letters patent, and respectively solicit the Examiner to expedite prosecution of this patent applications to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

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Respectfully submitted,

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